

REMARKS

Claim 1 has been amended in order to better recite the patentable nature of the present invention. The subject matter of the amendment is found in the specification as filed, *inter alia*, from page 36, line 14 to page 37, line 2. Therefore, no new matter has been added.

The Examiner asserts that claim 1 is obvious on the ground that the "treated product of culture broth" would include glucose-1-phosphate.

Although this rejection is respectfully traversed, solely in order to obviate the Examiner's assertion, Applicant has amended claim 1 to specify that the "treated product of culture broth" as being a concentrated product of the culture broth, a dried product of the culture broth, a culture supernatant obtained by centrifuging the culture broth, a concentrated product of the culture supernatant, an enzyme preparation obtained from the culture supernatant, cells (including microbial cells) obtained by centrifuging the culture broth, a dried product of the cells, a freeze-dried product of the cells, a surfactant-treated product of the cells, an ultrasonic-treated product of the cells, a mechanically disrupted product of the cells, a solvent-treated product of the cells, an enzyme-treated product of the cells, a protein fraction of the cells, an immobilized product of the cells and an enzyme preparation obtained by extraction from the cells.

Weissborn discloses that UDP-glucose is detected in reaction solution using, as an enzyme source a cell extract containing the galU gene product of *E. coli* from UTP and glucose 1-phosphate, and only confirms the activity of galU gene product.

Claim 1 as amended relates to a process for producing a sugar nucleotide.

As one salient difference between the production method of Weissborn and that in claim 1 of the present application, glucose-1-phosphate is added as a substrate in Weissborn, while in claim 1 of the present application, a sugar such as glucose or the like, must be added as a substrate to an aqueous medium. Although the Examiner considers that glucose 1-phosphate is included in a "treated product of culture broth", the Examiner's position is plainly incorrect since the "treated product of culture broth" is simply used as an enzyme source.^{1/}

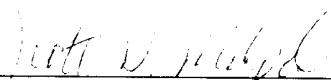
Entry hereof is earnestly solicited.

1/ As shown in the present specification and Examples, the "culture broth" used as enzyme source is obtained using normal medium components via a normal culturing method. Accordingly, it is apparent that the treated product of the culture broth does not contain glucose 1-phosphate.

As long as cells are contained in the "culture broth", trace amounts of glucose 1-phosphate may exist in the treated product of the culture broth. However, a sugar nucleotide cannot be produced using, as a substrate, trace amounts of glucose 1-phosphate that may be contained in the cells.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Amended) A process for producing a sugar nucleotide, which comprises:

selecting, as enzyme sources, a) a culture broth of a microorganism capable of producing nucleoside-5'-triphosphate ("NTP") from a nucleotide precursor, or a treated product of the culture broth selected from the group consisting of a concentrated product of the culture broth, a dried product of the culture broth, cells obtained by centrifuging the culture broth, a dried product of the cells, a freeze-dried product of the cells, a freeze-dried product of the cells, a surfactant-treated product of the cells, an ultrasonic-treated product of the cells, a mechanically disrupted product of the cells, an enzyme-treated product of the cells, a protein fraction of the cells, an immobilized product of the cells and an enzyme preparation obtained by extraction from the cells, and b) a culture broth or culture broths[,] of at least one strain of microorganism having genes responsible for production of a sugar nucleotide from [NTP and] a sugar selected from the group consisting of glucose, fructose, galactose, N-acetylglucosamine, N-acetylgalactosamine, mannose , N- acetylmannosamine and N-acetylneuraminic acid, or a treated product of the culture broth selected from the group consisting of a concentrated product of the culture broth, a dried product of the culture broth, cells obtained by centrifuging the culture broth, a dried product of the cells, a freeze-dried product of the

cells, a surfactant-treated product of the cells, an ultrasonic-treated product of the cells, a mechanically disrupted product of the cells, an enzyme-treated product of the cells, and a protein fraction of the cells, an immobilized product of the cells and an enzyme preparation obtained by extraction from the cells;

allowing the enzyme sources, the nucleotide precursor and the sugar to be present in an aqueous medium to form and accumulate the sugar nucleotide in the aqueous medium; and

recovering the sugar nucleotide from the aqueous medium.